Sustainable Growth and Circular Economy with Reference to Retail, Textile and Fashion Sector

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ABSTRACT

The growing environmental, social, and economic challenges posed by the fashion, textile, and retail industries underscore the urgency of embedding circular economy (CE) principles within global supply chains. This study examines the role of reuse, recycling, and innovation in promoting sustainable growth through waste reduction, natural resource conservation, and the enhancement of socio-economic value creation. Utilizing secondary data from a sample of 90 respondents across the fashion and technology industries, the analysis delineates demographic factors, supply chain expectations, and operational standards influencing CE adoption. The results of the regression show that supply chain integration, digitization, and efficiency all have a big positive effect on circularity. This means that digital tools and efficient logistics speed up reuse and refurbishment, which cuts down on scrap and saves money. The results show that fashion and textile companies are using more CE-driven models to stay competitive and be more environmentally responsible because they have higher return and scrap rates. The paper finds that circular practices are not only ancillary compliance measures; rather, they are strategic drivers for sustainable growth, harmonizing environmental stewardship with social and economic advancement. Practical suggestions include digital traceability, scaling up renovation, and working together to make policies. This research enhances CE scholarship by contextualizing sustainability within the practical dynamics of retail and fashion supply chains, providing valuable insights for both academic investigation and managerial application.

Keywords: sustainable growth, circular economy, recycling, reuse, innovation, fashion industry, retail, textile

1. Introduction

The retail, textile, and fashion sectors are at the epicenter of the sustainability debate, owing to their extensive consumption of natural resources and generation of post-consumer waste (Niinimäki et al., 2020). The garment industry alone is responsible for around 10% of greenhouse gas emissions and makes millions of tons of textile waste every year, most of which goes to landfills (Ellen MacArthur Foundation, 2017). These trends show that the "take-make-dispose" approach is not sustainable and goes against the goals of long-term growth and climate commitments. In this context, the CE framework, which focuses on reuse, recycling, and innovation, stands out as a good way to balance growth with environmental responsibility (Kirchherr, Reike, & Hekkert, 2017).

The problem is made worse by India's fast growing fashion and retail markets. The sector is a big source of jobs and money, but people are worried about how wasteful it is, how few things are recycled, and how poorly it uses circular models (Sharma & Purwar, 2022). Against this backdrop, the research problem guiding this study asks: How do CE practices contribute to sustainable growth, and what are their environmental, social, and economic impacts within the retail, textile, and fashion industries?

The objectives are twofold:

1. To examine the role of CE practices in promoting environmental sustainability through resource efficiency, waste minimisation, and climate protection.

2. To gauge the social along with economic benefits of circular models, particularly their contribution to community development, innovation, and cost optimisation.

The study employs a descriptive and analytical methodology, utilizing secondary data from 90 respondents involved in supply chain management within the fashion and technology industries. This sample presents a dual perspective: the fashion sector, characterized by elevated return and scrap rates, underscores the requirement of Circular Economy, whilst the technology sector provides comparative insights into efficiency-driven circular models. Statistical tests (Cronbach's alpha, regression) validate that supply chain integration, digitization, and efficiency are major predictors of circularity results, hence enhancing theoretical and practical insights into CE implementation.

This work boosts academic discourse and practical application in three distinct manners. First, it redefines CE not merely as an environmental strategy but as a catalyst for sustainable growth across the triple bottom line (Elkington, 1999). Second, it puts the analysis in the less-studied context of India's fashion and retail supply chains, which adds to the worldwide conversation about CE in new markets. Third, it turns real-world data into useful advice for managers and policymakers, showing that adopting CE may make businesses more competitive while also helping the environment and the community.

2. Literature Review

The idea of a CE came about because the linear "take-make-dispose" model is not very efficient and has dangerous effects on the environment. CE stresses closed-loop systems where resources are reused, recycled, or refurbished. This reduces waste and decreases the demand for additional materials (Geissdoerfer et al., 2017). Traditional sustainability models frequently just look at environmental outcomes, but CE uses innovation and systemic redesign to find a balance between protecting the environment, improving social well-being, and staying competitive in the economy (Kirchherr et al., 2017).

The connection between CE and sustainable growth is generally looked at using the triple bottom line framework (Elkington, 1999), which includes environmental, social, and economic factors. CE practices lower carbon emissions, save water, and cut down on landfill waste (Ellen MacArthur Foundation, 2017). CE improves the efficiency of resources and saves money by recycling and reusing them. It also produces jobs in the repair, refurbishing, and recycling industries (Korhonen, Honkasalo, & Seppälä, 2018). Researchers contend that CE is not just a sustainability mechanism but also a growth strategy, as it harmonizes profit motives with ecological and community advantages (Murray, Skene, & Haynes, 2017).

Niinimäki et al. (2020) emphasize the ecological impact of fast fashion, characterized by brief product life cycles and extensive consumption resulting in unsustainable waste levels. In this field, CE initiatives include designing for durability, recycling textiles, upcycling, and new business models including apparel rental and resale platforms (Pedersen & Andersen, 2015). Research demonstrates that organizations who use CE practices not only hurt the environment less, but they also develop customer loyalty by appealing to customers that are becoming more aware of sustainability (Shen, 2014).

To make recycling and reuse possible, there needs to be good reverse logistics, digital tracking of items, and good return management (Bressanelli et al., 2018). Research substantiates that the incorporation of CE principles into supply chain operations improves efficiency while minimizing waste and budget excesses (Genovese, Acquaye, Figueroa, & Koh, 2017). Supply chain innovation is especially important in growing economies like India, where

recycling and refurbishment infrastructure is still being built (Sharma & Purwar, 2022).

Digitalization, using things like blockchain, AI-driven analytics, and the Internet of Things (IoT), makes it easier to track and be open about things in circular supply chains (Upadhyay et al., 2019). New ideas in material science, such biodegradable fibers and chemical recycling, work with these technological enablers to make circularity more possible (Sandin & Peters, 2018). Empirical research demonstrate that organizations utilizing digitization attain elevated return rates, enhanced synchronization of physical and system inventories, and diminished turnaround times, all of which bolster Circular Economy (CE) outcomes (Awan, Sroufe, & Shahbaz, 2021).

3. Research Gap And Justification

Despite substantial studies, there are still gaps in integrating empirical supply chain data with CE theories, particularly in the Indian setting. A significant portion of the literature is either theoretical or confined to case studies of global brands, resulting in a deficiency of quantitative, sector-specific insights (Prieto-Sandoval, Jaca, & Ormazabal, 2018). Moreover, although CE research frequently highlights environmental advantages, there is a scarcity of studies that comprehensively assess the social and economic benefits of circular activities within the retail and fashion industries. This study fills these gaps by looking at real-world data from supply chain experts in the fashion and technology sectors and examining how important supply chain efficiency, digitization, and integration are for circularity outcomes.

4. Research Methodology

This study employs a descriptive along with analytical research approach, utilizing secondary data analysis from a structured survey of 90 respondents involved in supply chain management within the fashion and technology industries. The design is suitable as the goal is to investigate the influence of CE practices; reuse, recycling, and innovation, on sustainable growth regarding environmental, social, and economic results. The descriptive part gives a demographic and operational picture of the people who answered the questions, and the analytical part tests ideas about how supply chain integration, digitization, and efficiency affect circularity. The dataset involving 90 professionals from all throughout India, came from a wide range of age, gender, income, experience, and marital status groups. Half of them (50%) worked in fashion and half (50%) worked in technology. This dual-sector sampling enables cross-comparative insights: the fashion industry exhibits elevated return and scrap rates, whereas the technology sector exemplifies efficiency-driven circular models. This comparative framework enhances the study's external validity, rendering the findings applicable to wider industrial contexts (Creswell & Creswell, 2018).

The study operationalizes CE through three key predictors:

1. Supply Chain Integration – measured through supplier, distributor, and customer relationship variables.

2. Digitisation – measured by adoption of information technology tools, traceability mechanisms, and automation.

3. Efficiency – measured via turnaround time, float percentages, and scrap minimisation.

The dependent variable, Circular Economy Adoption, was assessed through perceptions of waste reduction, refurbishment, and reuse rates. Responses were quantified on Likert-type scales, enabling statistical analysis.

Cronbach's Alpha was used to make sure that everything was consistent within itself. Results validated satisfactory dependability across constructs: supply chain items ($\alpha = 0.750$), CE items ($\alpha = 0.716$), digitization items ($\alpha = 0.802$),

and efficiency items (α = 0.773). These values surpass the standard 0.70 criterion (Nunnally & Bernstein, 1994), signifying strong measurement reliability. Content validity was corroborated by the alignment of survey items with recognized CE frameworks (Kirchherr et al., 2017; Geissdoerfer et al., 2017).

The paper used descriptive statistics to give a general picture of the respondents and to highlight operational benchmarks including return rates, float percentages, and scrap rates. It has used regression analysis, a type of inferential statistics, to evaluate our ideas about how supply chain factors affect CE results. For instance, regression analysis revealed a robust positive correlation across supply chain integration and CE adoption (β = 0.987, p < 0.001). Also, digitisation (β = 0.289, p = 0.006) and efficiency (β = 0.249, p = 0.018) were recognized as important predictors. These results enable the study to draw causal inferences within the confidence intervals of social science research.

5. Ethical Considerations

Because the study used secondary data, there were not substantial direct ethical issues with getting participants or collecting data. However, the existing data was securely anonymised, and all interpretations honor the integrity of the original dataset. The secondary analysis enhances academic discourse by recontextualizing the dataset within a CE framework, so ensuring scholarly rigor and ethical adherence.

6. Results And Analysis

The empirical conclusions of this study robustly substantiate the assertion that the circular economy has transitioned from a marginal sustainability mechanism to a pivotal factor influencing strategic growth in sectors such as fashion, textiles, and retail. The fashion industry's high return and scrap rates show how linear models of production and consumption are structurally inefficient. The same data, on the other hand, also show that there are chances for change through reuse, recycling, and refurbishment. Niinimäki et al. (2020) argue that the fashion industry's environmental impact can only be reduced by incorporating circular design and consumption models. The findings of this study demonstrate that industry participants are beginning to formalize these practices. The fact that more than 35% of respondents said they would refurbish their products shows that reverse logistics and extending the product lifecycle are becoming real practices instead of just ideas.

The comparative lessons from the IT sector underscore the critical importance of efficiency and digitization in integrating Circular Economy principles. Fashion is still responding to consumer-driven waste pressures, but technology supply chains have greater control systems, as seen by reduced write-off rates and faster disposition cycles. This aligns with Genovese et al. (2017), who contend that supply chain integration and digital traceability are essential for the expansion of CE practices. This study validates that digitization is a major predictor of circularity outcomes (β = 0.289, p = 0.006), establishing that technological enablers like real-time data analytics and system-to-stock alignment furnish the essential framework for implementing reuse and recycling.

The regression analysis supports the triple bottom line theory (Elkington, 1999) by demonstrating the interdependence of environmental, social, and economic effects in the adoption of CE. Reducing scrap rates is good for the environment since it helps protect the climate and save natural resources. Refurbishment and recycling create new job opportunities, especially in repair and reverse logistics, which helps communities in many ways. The proof of cost avoidance of up to ₹9 crores per year shows that CE is not only an ethical duty but also a good business move. These results align with the perspective of Korhonen, Honkasalo, and Seppälä (2018), who define CE as a systemic innovation that harmonizes ecological responsibility with profitability.

These findings are even more important in the Indian setting. Literature frequently depicts the adoption of CE as a difficulty in emerging markets, attributable to infrastructural and policy constraints (Sharma & Purwar, 2022). But the data this paper analyzed at here show that experts in the business are becoming more aware of and interested in CE procedures. High return rates are common in fashion retail. This can be seen as both a problem for the business and a chance to improve recycling and reuse systems. Likewise, the readiness to sustain low float percentages and elevated return velocities signifies managerial acknowledgment of efficiency as a conduit to sustainability. These findings indicate a significant transformation in organizational attitudes, consistent with the assertions of Murray, Skene, and Haynes (2017), who contend that the adoption of CE signifies a paradigm change rather than mere incremental reform.

However, the data also show that CE adoption is not the same across all businesses. The fashion industry is behind technology in terms of going digital and being more efficient, which has a direct effect on the environment along with the utilisation of resources. The scalability of repair and recycling in fashion is limited without strong digital infrastructure. This is similar to what Sandin and Peters (2018) said, which was that circularity in fashion could be limited to niche trials instead of becoming a common practice without systemic innovation. So, governments and business leaders in India need to focus on increasing digital skills, giving businesses incentives to follow the rules, and creating collaborative industry platforms to speed up CE integration.

7. Conclusion And Recommendations

This research has shown that using circular economy strategies including reuse, recycling, refurbishing, and innovation can help the fashion, textile, and retail industries thrive wherein it is beneficial for the environment. The research, based on secondary data from 90 supply chain professionals, demonstrates that supply chain integration, digitization, and operational efficiency are key predictors of circularity results. These results validate the insufficiency of linear "take-make-dispose" models and endorse the thesis posited by global circular economy literature that sustainable growth necessitates systemic transformation (Geissdoerfer et al., 2017; Kirchherr et al., 2017).

From an environmental point of view, the decrease in scrap rates, the faster pace of reverse logistics, and the increased utilisation of refurbishment show how CE helps protect the environment. This is in line with India's promises under the Sustainable Development Goals, specially SDG 12 (responsible consumption and production) along with SDG 13 (climate action). From a social point of view, the rise of refurbishment and repair operations shows that new jobs are being created and value is being created at the community level. This is in line with Korhonen, Honkasalo, and Seppälä's (2018) thesis that CE embeds social equality within economic systems. Lastly, from an economic point of view, the ability to avoid costs, up to ₹9 crores a year in some cases, shows that CE is a driver of competitiveness, not just compliance.

The analysis, however, shows that differences exist amongst industries. The tech industry shows how digitization and efficiency-driven CE may be good for business because it has fewer write-offs and faster disposal cycles. On the other hand, the fashion industry's higher return and shred rates show both its structural weaknesses and the opportunity for circular transformation that hasn't been used yet. If digital traceability, inventory alignment, and reverse logistics aren't scaled up in fashion retail, CE adoption could stay fragmented and not be enough to make up for the industry's environmental impact.

8. Recommendations

1. Adoption of blockchain, IoT, and AI-enabled analytics should be prioritized to enhance traceability across supply chains. Transparent, real-time data systems will allow fashion retailers to reduce float percentages, improve system-stock alignment, and optimize reverse logistics.

2. Fashion retailers should institutionalize refurbishment and textile recycling as mainstream business processes rather than peripheral practices. Partnerships with recycling enterprises and the development of in-house refurbishment units can enhance both environmental and economic returns.

3. Policymakers should incentivize CE adoption through tax benefits, subsidies for recycling infrastructure, and extended producer responsibility (EPR) schemes. Such interventions would accelerate the integration of circularity into mainstream retail and textile operations in India.

4. Firms should design circular initiatives with social inclusion in mind, creating livelihood opportunities in repair, recycling, and community-based collection systems. This ensures that CE adoption translates into tangible community development benefits alongside ecological gains.

9. Limitations And Future Research

While the study offers important empirical insights, its reliance on secondary data constrains the ability to capture evolving consumer behaviors and organizational practices in real time. Moreover, the dataset is geographically limited to India, which may affect generalizability. Future research should therefore adopt longitudinal and cross-country designs, integrate consumer-level perspectives, and examine emerging business models like rental, resale, and digital fashion platforms. By doing so, scholarship can provide a more comprehensive understanding of how CE catalyzes sustainable growth in global and regional contexts.

In conclusion, the findings affirm that CE practices are not supplementary strategies but fundamental levers of sustainable growth. By converging environmental conservation, social inclusion, and economic competitiveness, CE offers a transformative blueprint for the future of fashion, textile, and retail industries in India and beyond.

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